

AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Claims 1-12. (Canceled).

13. (Currently Amended) A glass-plate working apparatus comprising:

grinding means for grinding a peripheral edge of a glass plate;

grinding supporting means for supporting the glass plate whose peripheral edge is to be ground by said grinding means; and

transporting means for transporting said glass plate in and out said grinding supporting means by a linear movement thereof crossing above said grinding supporting means,

wherein said grinding supporting means includes a grinding supporting table, a plurality of suction cups which are held on said grinding supporting table by being attached by suction to said grinding supporting table and suck and hold the glass plate by sucking the glass plate whose peripheral edge is to be ground, said plurality of suction cups being separated from each other,

and arranging means for disposing said plurality of suction cups, respectively, at positions corresponding to a shape of the glass plate to be ground, and

wherein said arranging means includes a suction-cup supporting body for supporting said suction cups separately from said grinding supporting table, a suction-cup lifting device for raising the suction cup which is supported by said grinding supporting table or the suction-cup supporting body, and a suction-cup moving device which is adapted to move said suction cup raised by said suction-cup lifting device from on said grinding supporting table onto said suction-

cup supporting body or from on said suction-cup supporting body onto said grinding supporting table in correspondence with the shape of the glass plate whose peripheral edge is to be ground by said grinding means,

wherein said transporting means includes one lifting device for raising the glass plate to be carried in and another lifting device for raising the glass plate on the suction cup to be carried out,

wherein said transporting means and said suction-cup moving device share a slider to which said suction-cup lifting device, said one lifting device and said other lifting device are attached, and which is linearly movable in one direction,

wherein said grinding supporting table of said grinding supporting means is movable in the different direction from said one direction in which said slider is linearly movable,

wherein said arranging means is adapted to move said suction-cup lifting device by a linear movement of said slider in said one direction and a movement of said grinding supporting table of said grinding supporting means so as to be capable of arranging said suction-cup lifting device at a position corresponding to a shape of glass plate on said grinding supporting table,

wherein said suction cup includes a hollow member whose upper surface is covered with an elastic member for abutment against the glass plate, an abutment body for abutment against said grinding supporting table, and a connecting shaft which connects said abutment body and said hollow member,

wherein said suction-cup lifting device includes a gripper for gripping the suction cup, and an air cylinder unit having a movable piston rod to one end of which the gripper is fixed,

wherein said gripper has at least two grip arms which are moved close to or away from each other,

wherein said at least two grip arms are adapted to abut against peripheral edge portions of said hollow member while approaching each other, respectively, to grip said suction cup.

14. (Canceled).

15. (Previously Presented) The glass-plate working apparatus according to claim 13, wherein said arranging means is adapted to dispose said suction cups at positions corresponding to a shape of the glass plate in association with said transporting means and said grinding supporting means.

16. (Canceled).

17. (Previously Presented) The glass-plate working apparatus according to claim 13, wherein said suction cup has an annular abutment surface for abutment against said grinding supporting table and a recessed surface which is recessed with respect to said grinding supporting table, and is adapted to be attached by suction to said grinding supporting table through an opening in the recessed surface.

18. (Previously Presented) The glass-plate working apparatus according to claim 17, wherein said suction cup includes a disk body having the annular abutment surface and the recessed surface; a cylindrical body whose upper surface is covered with an elastic member for abutment against a lower surface of the glass plate; and a connecting shaft which connects said disk body and said cylindrical body, said suction cup being adapted to suck the glass plate

through an opening in an upper surface of said elastic member and to be attached by suction to said grinding supporting table through the opening in the recessed surface of said disk body.

Claims 19-24. (Canceled).

25. (Currently Amended) A glass-plate working apparatus comprising:

grinding means for grinding a peripheral edge of a glass plate;

grinding supporting means for supporting the glass plate whose peripheral edge is to be ground by said grinding means; and

transporting means for transporting said glass plate in and out of said grinding supporting means by a linear movement thereof crossing above said grinding supporting means,

wherein said grinding supporting means includes a grinding supporting table, a plurality of suction cups which are held on said grinding supporting table by being attached by suction to said grinding supporting table and suck and hold the glass plate by sucking the glass plate whose peripheral edge is to be ground, said plurality of suction cups being separated and individually movable relative to each other, and arranging means for individually disposing said plurality of suction cups, respectively, at positions corresponding to a shape of the glass plate to be ground, and

wherein said arranging means includes a suction-cup lifting device for raising the suction cup which is supported by said grinding supporting table, and a suction-cup moving device which is adapted to move said suction cup raised by said suction-cup lifting device in correspondence with the shape of the glass plate whose peripheral edge is to be ground by said grinding means,

wherein said transporting means includes one lifting device for raising the glass plate to be carried in and another lifting device for raising the glass plate on the suction cup to be carried out,

wherein said transporting means and said suction-cup moving device share a slider to which said suction-cup lifting device, said one lifting device and said other lifting device are attached, and which is linearly movable in one direction,

wherein said grinding supporting table of said grinding supporting means is movable in the different direction from said one direction in which said slider is linearly movable,

wherein said arranging means is adapted to move said suction-cup lifting device by a linear movement of said slider in said one direction and a movement of said grinding supporting table of said grinding supporting means so as to be capable of arranging said suction-cup lifting device at a position corresponding to a shape of glass plate on said grinding supporting table,

wherein said suction cup includes a cylindrical body whose upper surface is covered with an elastic member for abutment against the glass plate; a disk body for abutment against said grinding supporting table; and a connecting shaft which connects said disk body and said cylindrical body,

wherein said suction-cup lifting device includes a gripper for gripping the suction cup, and an air cylinder unit having a movable piston rod to one end of which the gripper is fixed,

wherein said gripper has at least two grip arms which are moved close to or away from each other, an attachment body to which said grip arms are attached, and a rotating mechanism for synchronously rotating the grip arms with each other, about shafts provided in the attachment body as compressed air is supplied,

wherein said air cylinder unit is fixed to a slider, and the attachment body is secured to the one end of the piston rod,

wherein said at least two grip arms have recessed surfaces which are recessed with respect to said cylindrical body respectively, and are adapted to abut the recessed surfaces against peripheral edge portions of said cylindrical body while approaching each other, to grip said suction cup.

26. (New) A glass-plate working apparatus comprising:
grinding means for grinding a peripheral edge of a glass plate;
grinding supporting means for supporting the glass plate whose peripheral edge is to be ground by said grinding means; and

transporting means for transporting said glass plate in and out said grinding supporting means by a linear movement thereof crossing above said grinding supporting means,

wherein said grinding supporting means includes a grinding supporting table, a plurality of suction cups which are held on said grinding supporting table by being attached by suction to said grinding supporting table and suck and hold the glass plate by sucking the glass plate whose peripheral edge is to be ground, said plurality of suction cups being separated from each other, and arranging means for arranging said plurality of suction cups, respectively, at positions corresponding to a shape of the glass plate to be ground,

wherein said arranging means is composed of the grinding supporting table and the suction-cup lifting device attached to said transporting means for transporting said glass plate in and out,

BANDO, Kazuaki
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wherein suction-cup lifting device has the gripper for gripping from a lateral direction
and lifting the suction cup.